OLIVER WYMAN

COVID-19: RESPONSE

24 March 2020

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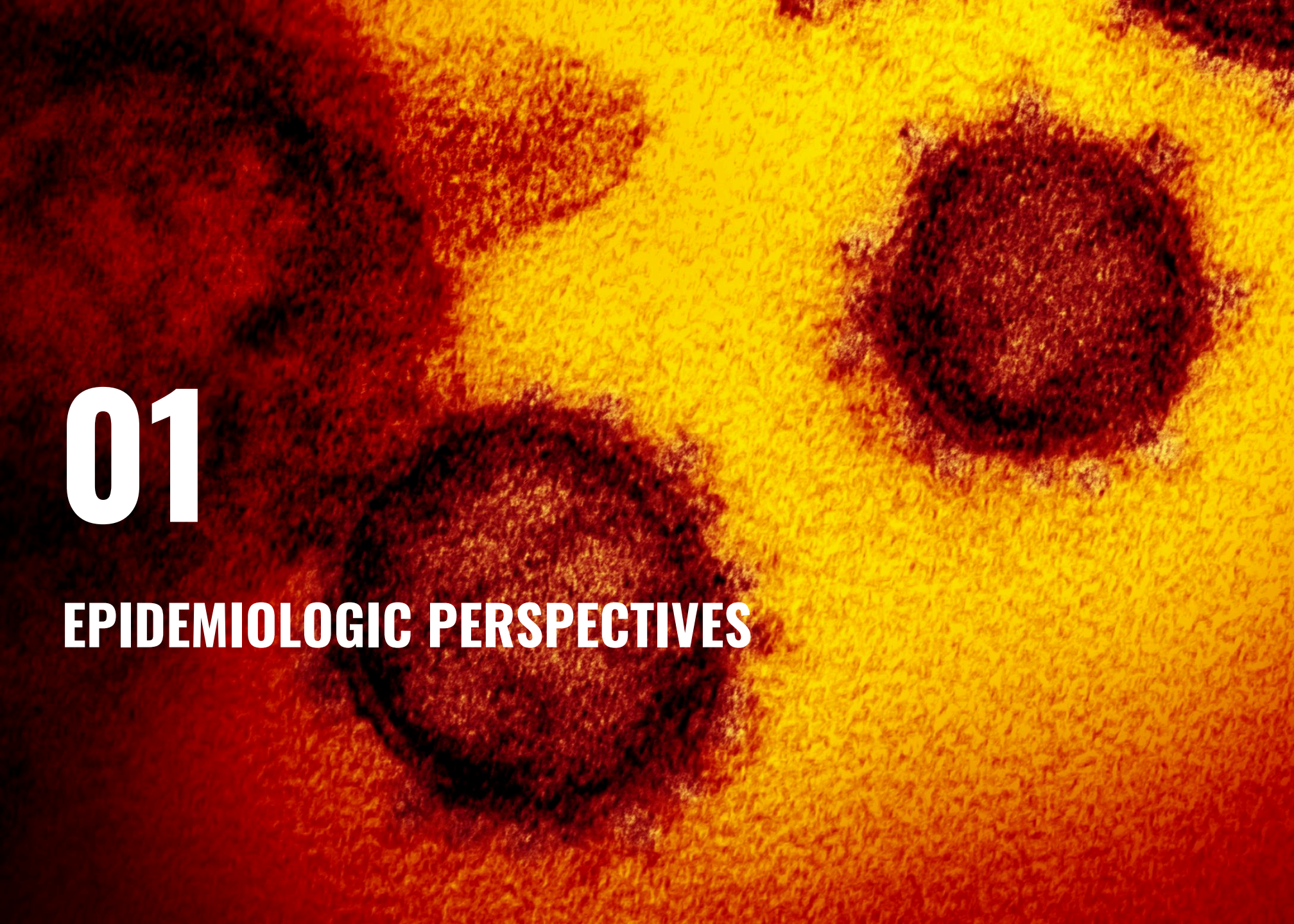


01

EPIDEMIOLOGIC PERSPECTIVES

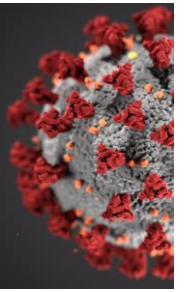
SUMMARY

Context and purpose

The novel coronavirus has infected hundreds of thousands of people globally and is taking a severe toll on individuals, families, and economies as productivity drops and stock markets reflect increased global uncertainty

This document provides some baseline facts and guidance for business leaders as to critical questions to address in the immediate and near-term to ensure the continuity of their business and the safety, health, and wellbeing of their workforce and customers

What is it?

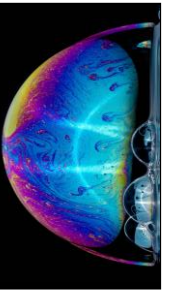


COVID-19 is the name for the illness caused by the novel coronavirus that originated in Wuhan, China in December 2019

It is from the same family of viruses that cause some common colds, as well as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS)

It is considered similar to other respiratory infections such as influenzas; symptoms range from fever, cough, shortness of breath to more severe cases of pneumonia and organ failure

Are we overreacting?



Current pace of spread and understanding of the disease suggest that we should take serious actions:

- Early data suggests that COVID-19 may be 2–3 times as contagious as the flu with a much higher case fatality rate
- Approximately **19% of confirmed cases are considered "severe" or "critical", requiring hospitalization**[1]
- The infectious cycle for COVID-19 is complex and more difficult to manage for several reasons
  - The **incubation period** for COVID-19 appears to be longer than that of the flu, at **~5 days**[2] versus 2–4 days[3]
  - Multiple publications confirm that COVID-19 can be spread **asymptomatically**[4,5]
  - The **infectious period appears long** – emerging data suggests that peak viral loads are reached rapidly after infection and shedding continues beyond symptom resolution[6]

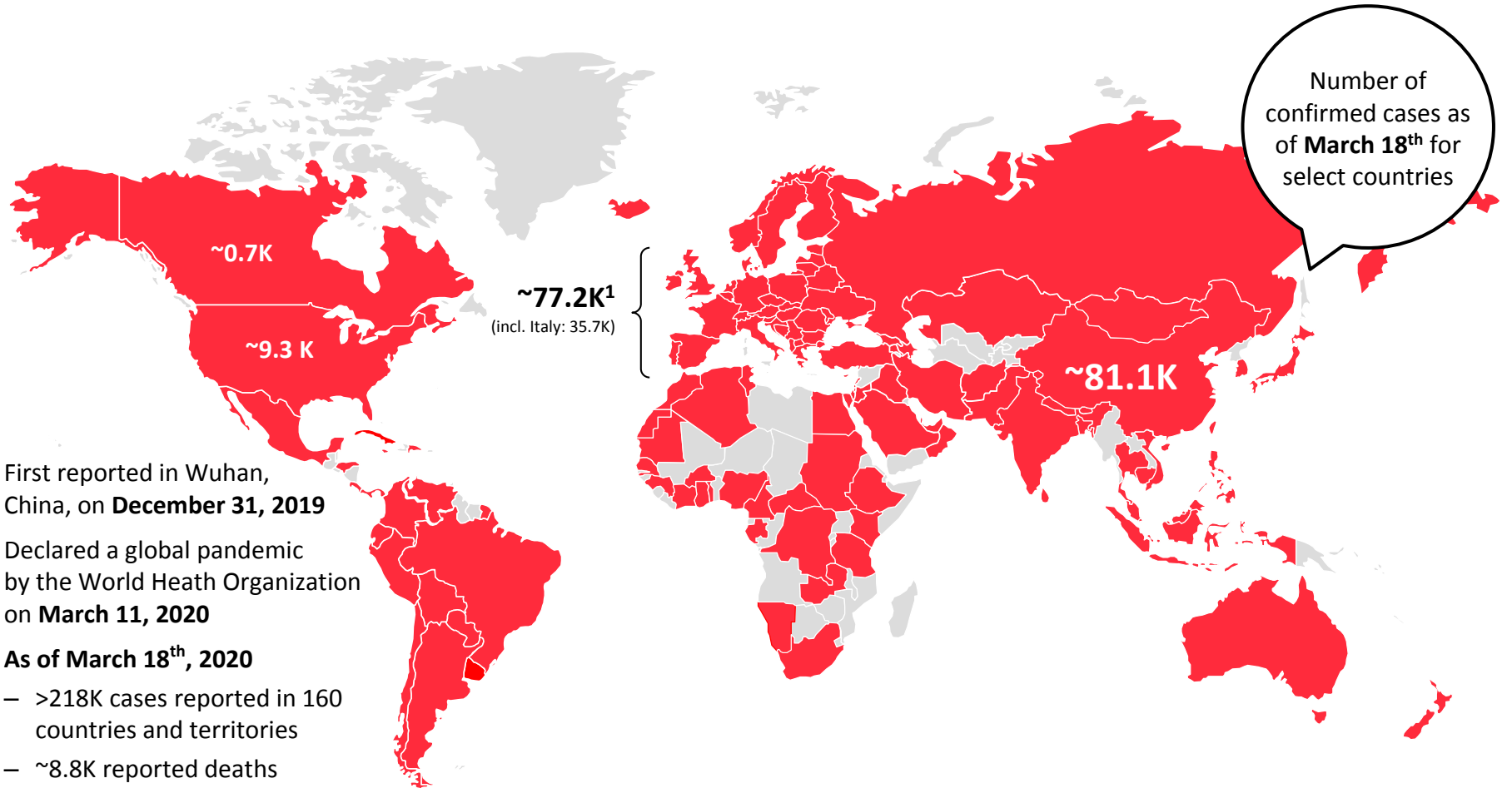
We don't yet know if COVID-19 is seasonal like the flu; half of coronaviruses appear to be seasonal, and half do not; there is no direct evidence yet to suggest this is seasonal

As more data is collected, we may come to understand that COVID's spread and severity are more like the seasonal flu; and there is reason to believe that vaccine and treatment pathways will lead to more effective responses for severe cases.

1. China CDC; 2. London School of Tropical Medicine; 3. CDC; 4. JAMA. "Presumed Asymptomatic Carrier Transmission of COVID-19", Feb 21 2020.;5. NEJM. "Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany". Mar 5 2020.; 6. MedRxIv. "Clinical presentation and virological assessment of hospitalized cases of coronavirus disease 2019 in a travel-associated transmission cluster". Mar 8. 2020

Information as of 3/18/20

COVID-19 SPREAD GLOBALLY



- First reported in Wuhan, China, on **December 31, 2019**
- Declared a global pandemic by the World Heath Organization on **March 11, 2020**
- **As of March 18th, 2020**
  - >218K cases reported in 160 countries and territories
  - ~8.8K reported deaths

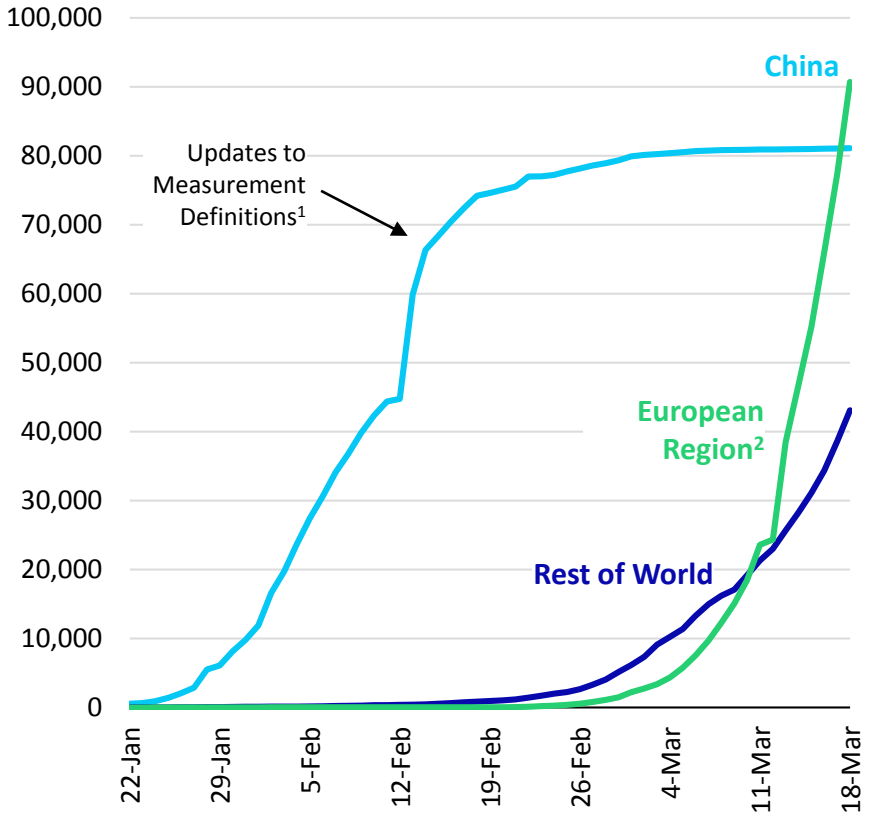
1. Countries included: All Countries in "European Region" Sub-region in WHO Situation Report
Source: Map from CDC (link), Numbers from John Hopkins University & Medicine (link)

COVID-19 TRENDS AND SPREAD OF THE DISEASE

The number of new cases in China has slowed – likely due to significant containment measures – as the outbreak spreads to other countries

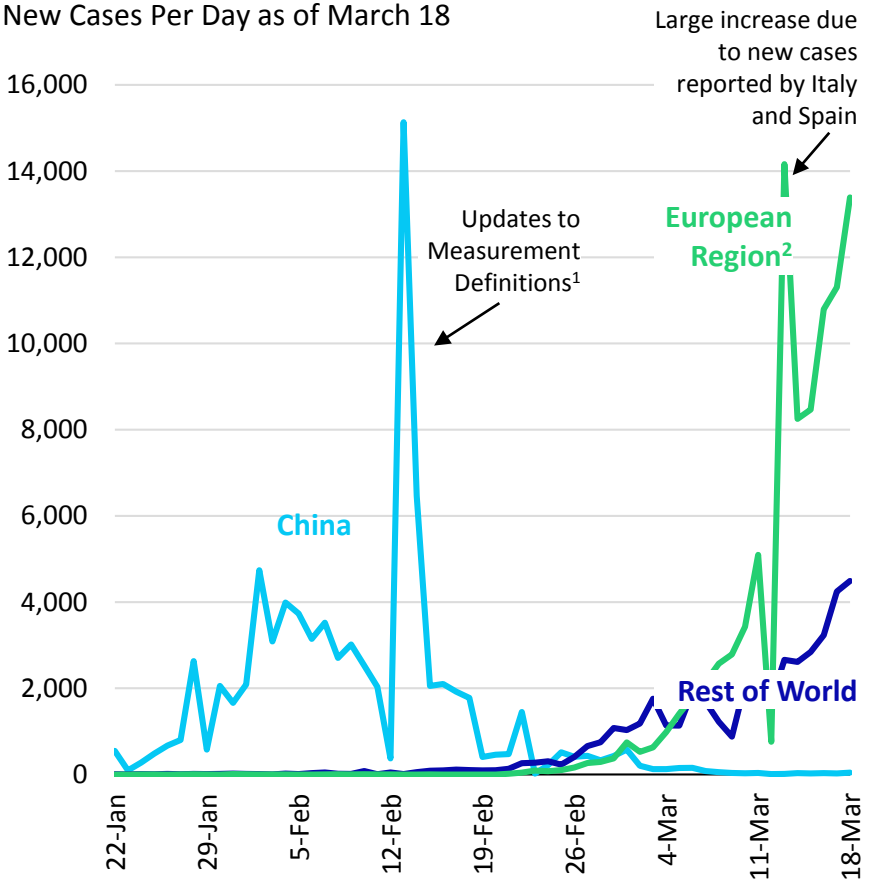
Confirmed Cases of COVID-19

Cumulative Number of Cases as of March 18



New Cases Per Day of COVID-19

New Cases Per Day as of March 18

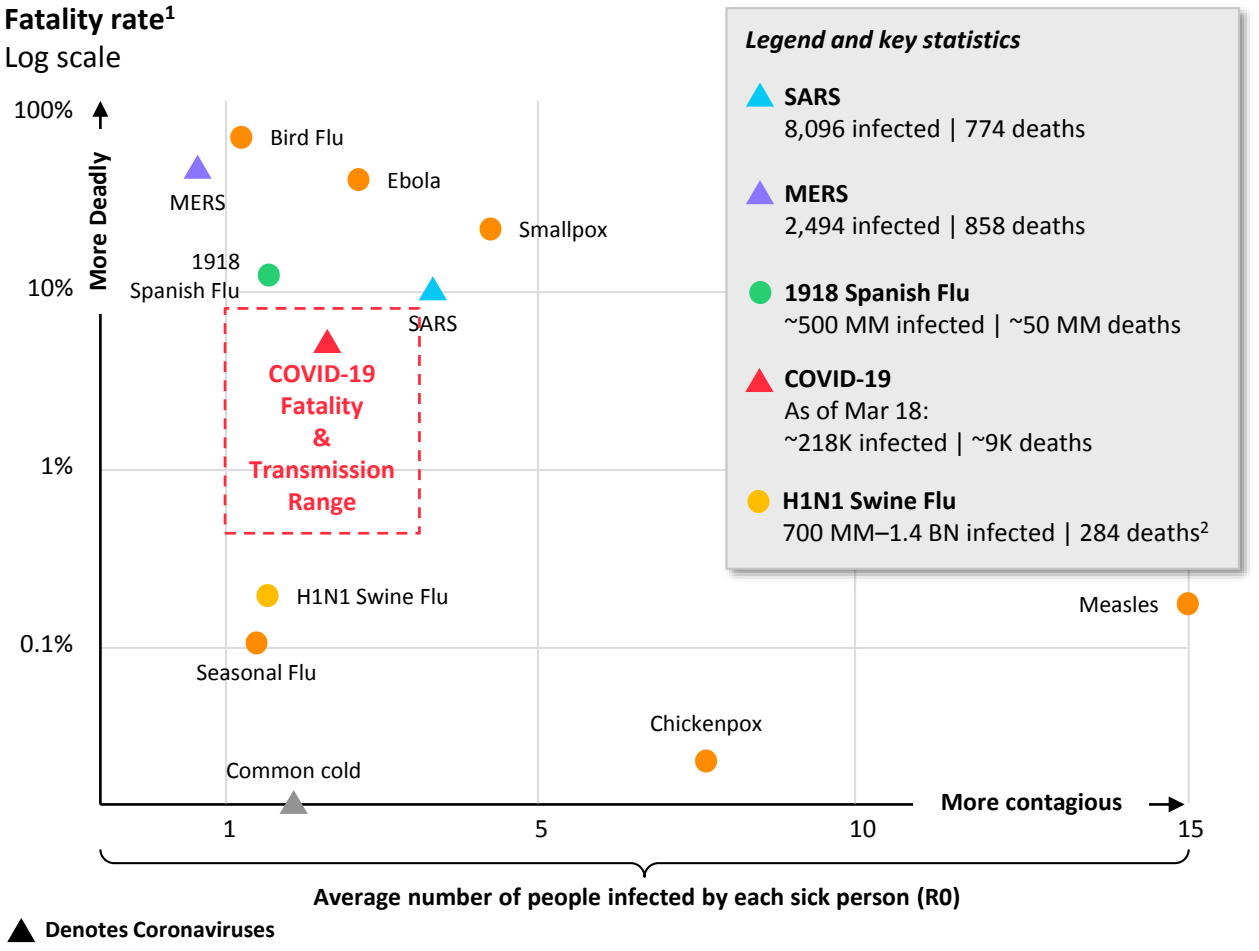


Source: John Hopkins University & Medicine Coronavirus Resource Centre

1. Until February 17, the WHO situation reports included only laboratory confirmed cases causing a spike in total cases. Some sources include this update as of February 13. The jump due to inclusion of non lab confirmed cases is not included in the new cases data in WHO situation reports.; 2. Includes countries categorized under "European region" based off of latest WHO Situation Reports

HOW DOES COVID-19 COMPARE TO OTHER DISEASE OUTBREAKS? (1 OF 2)

COVID-19 is currently more deadly that the Flu, but the science on transmission and mortality continues to evolve



Additional details

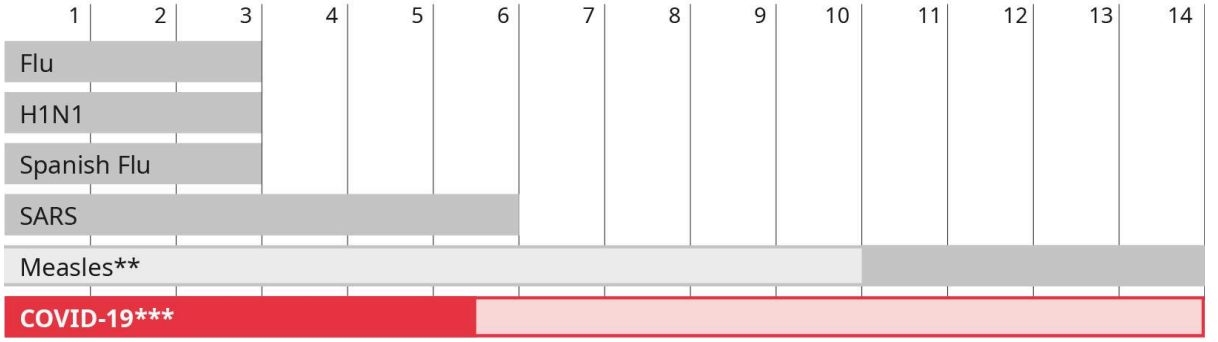
- R-naught (R0) represents the number of cases an infected person will cause. R0 for COVID-19 is currently estimated at between 2 and 3 (with edge of range estimates closer to 1.4 and 3.6), which means each person infects 2-3 others[3]; R0 for the seasonal flu is around 1.3[4]
- The global case fatality rate for confirmed COVID-19 cases is currently 4.4%[5] according to WHO's reported statistics versus 0.1% for the seasonal flu; the rate varies significantly by country (e.g., Italy – 7.9%, South Korea – 0.97%[6])
- We expect case fatality rates to fluctuate as testing expands identifying more cases and as existing cases are resolved

1. New York Times (link) for fatality and R-naught comparisons, CDC timelines for case numbers (selected link: CDC SARS timeline); 2. Updated CDC estimates (link); 3. The R0 for the coronavirus was estimated by the WHO to be between 1.4 -2.5 (end of January estimate) (link), other organizations have estimated an R0 ranging between 2-3 or higher (link); 4. CDC Paper (link); 5. WHO Situation Reports – 55;
6. Calculated as Number of Deaths / Total Confirmed Cases as reported by John Hopkins University

HOW DOES COVID-19 COMPARE TO OTHER DISEASE OUTBREAKS? (2 OF 2)

The infectious cycle of COVID-19 is unlike that of any other outbreak we have seen before

Incubation Timeline (Days)*, [1]



*All but SARS have the potential for asymptomatic transmission
**Symptoms most commonly appear on Days 10-14
***The median incubation period for COVID-19 is 5.5 days, but symptoms can develop as late as 14 days post exposure

Why does this matter?

- The combination of a longer incubation period with asymptomatic transmission means that there is a longer window of time during which infected individuals are unaware that they are contagious

Why is quarantine 14 days?

- While the median incubation period is 5.5 days, symptoms have been documented to occur over a longer time frame; 14 days should capture 99% of all cases[2]

What do we still not know?

- We still do not accurately understand the full infectious period for COVID-19

What we know about the infectious cycle?

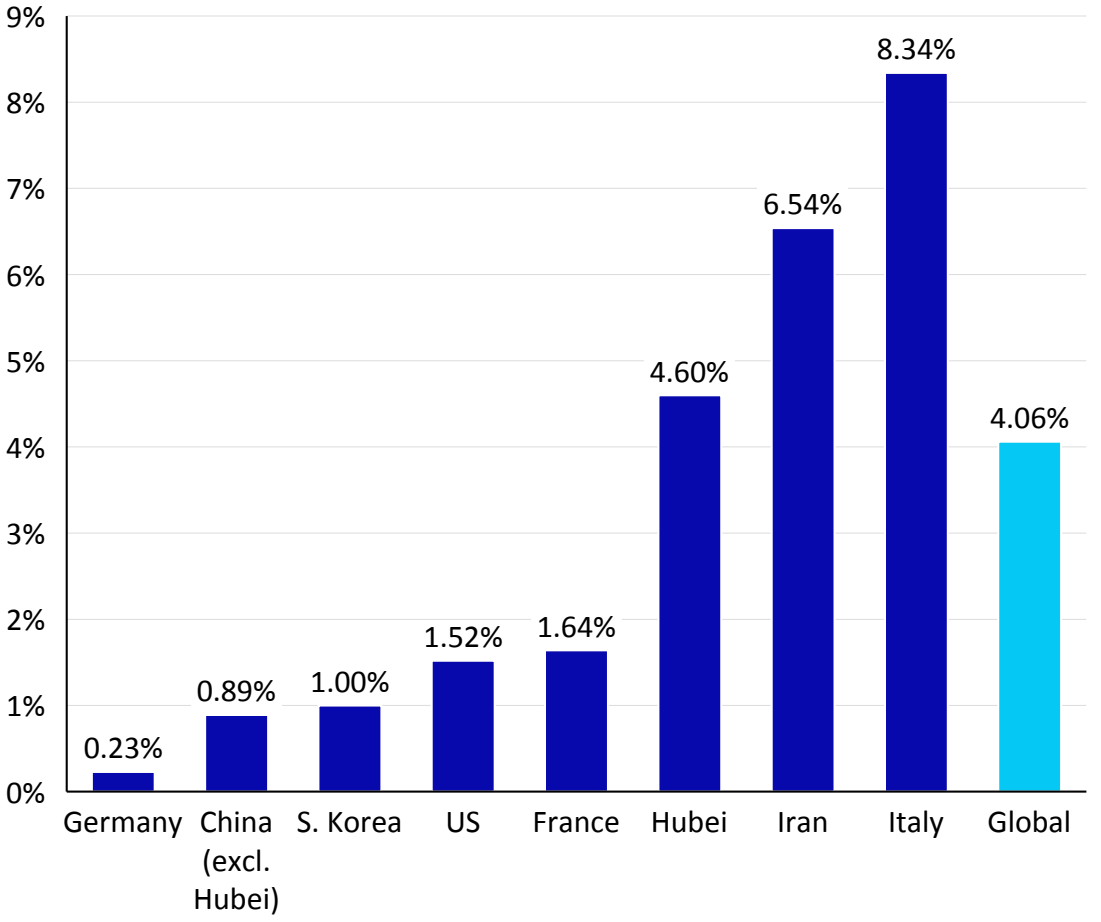
- Multiple sources confirm asymptomatic transmission, but the exact timing of when an exposed individual becomes contagious is not known [3, 4, 5]
- Viral loads build rapidly and continue to shed until 6-12 days after symptoms have cleared[6]

1. CDC 2. Annals of Internal Medicine (link) 3. JAMA (link) 4. NEJM (link) 5. Science (link) 6. medRxiv (link)

CASE FATALITY RATE (CFR) BY COUNTRY

While the global CFR is a useful metric to understand COVID-19, country-specific CFRs range by an order of magnitude

CFR by country[1]



What is driving the variation?

- **Position along the trajectory of the outbreak:** For many countries (e.g., Europe, US), the vast majority of cases have not yet resolved and the CFR is changing rapidly
- **Breadth of testing:** Broader testing leads to a larger confirmed base of patients, decreasing CFR
- **Distribution of key risk factors within the population:** Age, gender and pre-existing conditions have a significant influence on mortality (see next page); countries with higher CFRs have a population skewed towards these risk factors (e.g., Italy has the second oldest population on earth)
- **Health system threshold:** Every country has a health system capacity, that when exceeded, will result in the inability to provide sufficient support to all patients thereby resulting in a higher CFR

1. Calculated as Number of Deaths / Total Confirmed Cases as reported by Johns Hopkins University as of 3/18/20

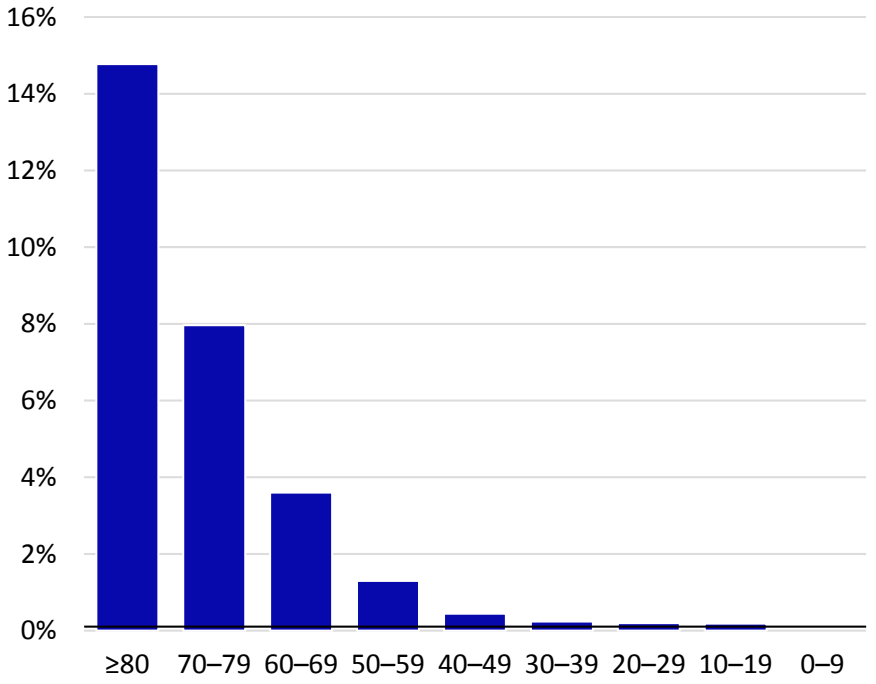
CASE FATALITY RATE (CFR) BY PATIENT CHARACTERISTIC

Significantly higher death rates occur among the elderly and those with underlying conditions

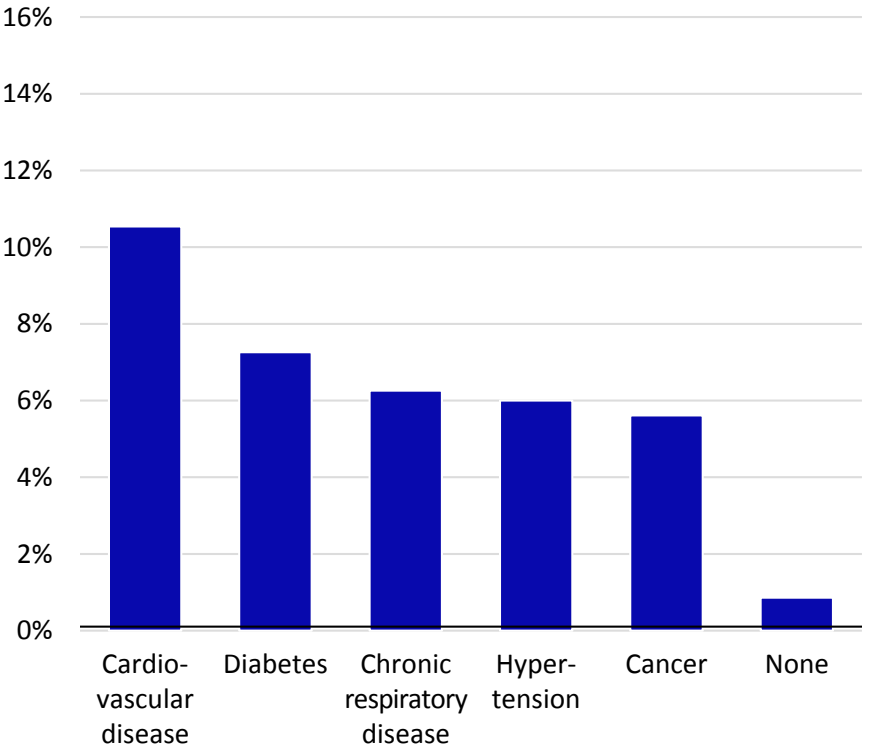
Case Fatality Rate by Specific Patient Characteristics

All confirmed cases in China as of February 11, 2020

by Age



by Comorbid Condition



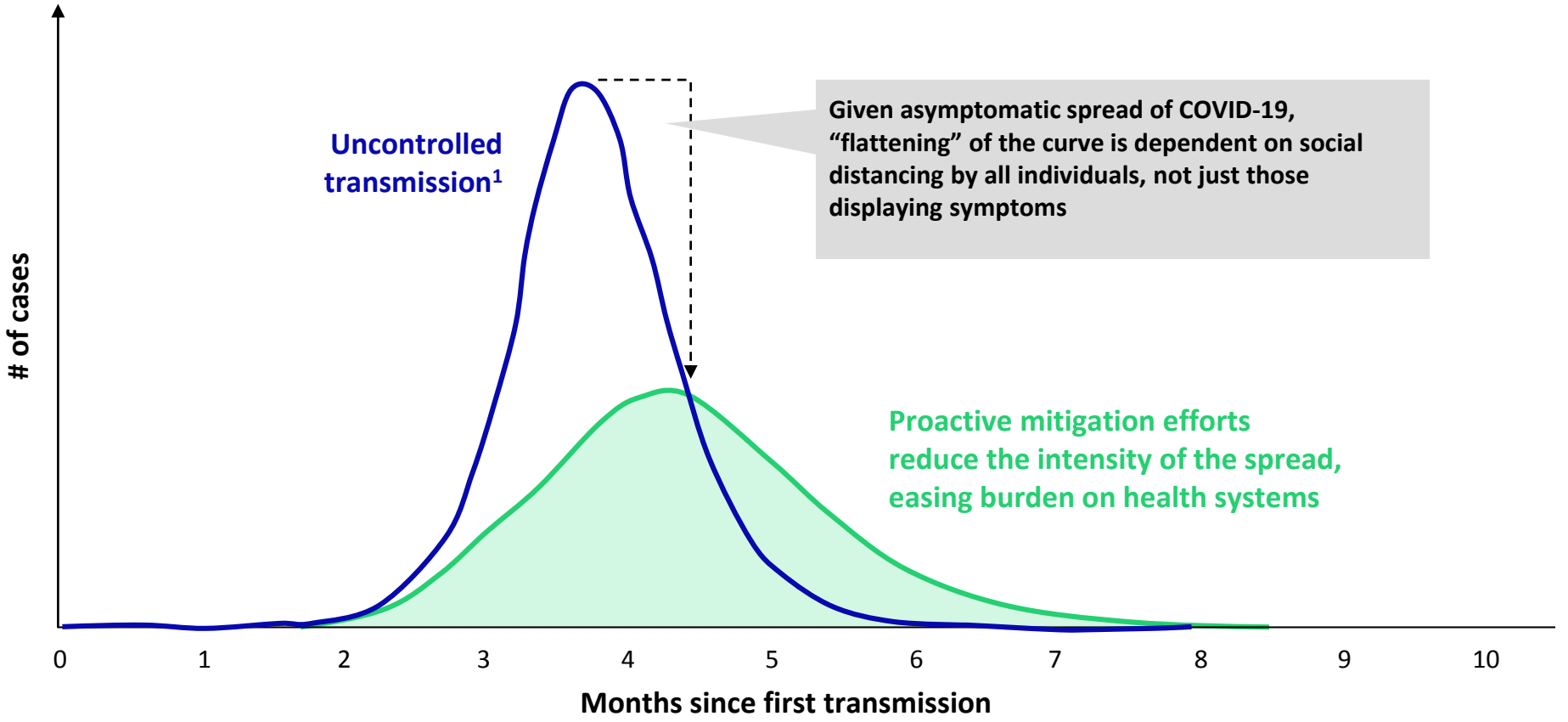
Source: China CDC Weekly. Vital Surveillances: The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) — China, 2020.
Notes: Data includes 44,672 confirmed cases reported through February 11, 2020.

HOW CAN MITIGATION MEASURES LOWER THE BURDEN OF THE PANDEMIC?

Proactive and swift mitigation measures (e.g., social distancing) are critical to control the spread and reduce the overall burden on the healthcare system, as ~15–20% of confirmed cases require hospitalization

Illustrative COVID-19 transmission with and without mitigation measures

Timing and width of peaks may vary between countries



1. Assuming case-based isolation only

Source: Adapted from "How will country-based mitigation measures influence the course of the COVID-19 epidemic". Lancet. Mar 6 2020. https://doi.org/10.1016/S0140-6736(20)30567-5

EARLY OBSERVATIONS ON CONTAINMENT MEASURES

- Experience to date in Europe and the United States points to a much lower level of containment than seen in China
  - Response in Europe and the United States has been **fragmented**: from **"wait-and-see" approaches, to "partial" solutions** (i.e., limiting gatherings or travel in a city or region), to **total lockdown** of a country
- To arrest the growth of the confirmed cases, we have observed a number of **best practices**
  - Moving quickly with a seemingly small number of cases to implement **containment measures**
  - Deploying **extensive testing across a population to identify cases**, particularly in light of asymptomatic transmission of the virus
  - Implementing **aggressive containment measures** (e.g., closing bars, schools, restaurants, gyms, churches to maintain social distancing, restricting non-essential travel, quarantines of infected patients, even those who are asymptomatic)

HOW LONG COULD THIS LAST? HOW MIGHT THIS PLAY OUT?

Two key questions, and a number of items to monitor, help define three potential scenarios

Q1: Will public health measures contain individual outbreaks?
China has demonstrated containment is feasible, but will containment be maintained there, and (more importantly) will all other countries move rapidly enough with strong enough containment measures to achieve a similar trajectory?

No

Q2: Will a mitigating factor emerge to help dampen the effects of the virus?
If public health measures are insufficient in some or all countries, will containment be aided by an external factor such as a mutation that renders the virus less virulent, seasonality, or improvements in CFR?

Key items to watch

- New case rates as China lifts restrictions: some new cases (a 'bump') are to expected, but a spike could be concerning
- Case growth rates in the US and Europe: Multiple EU countries and the US have sustained near-exponential growth over the last few weeks and are enacting various degrees of containment measures now; the next few weeks are critical to see whether the tide can be stemmed

Yes (but very difficult)

SCENARIO 1
Serial outbreaks lasting 3–4 months

Yes

SCENARIO 2
6–12 months to rein in pandemic

No

SCENARIO 3
12+ months; ongoing epidemic

Key items to watch

- Signs of seasonality: We will not know definitively if the virus is seasonal for 9-12 months, but diminishing outbreaks in the Northern Hemisphere as temperatures rise, and limited outbreaks in the Southern Hemisphere could be indicative
- Data on mutations and their impact: Very limited data is available on the impact of identified mutations of the virus on prevalence, transmission, or severity of disease

OUR SCENARIO FORECAST GENERATOR HELPS TO QUANTIFY POTENTIAL SCENARIOS

The model paints the picture of the "book-end" scenarios and a range of trajectories in between based on a series of key inputs

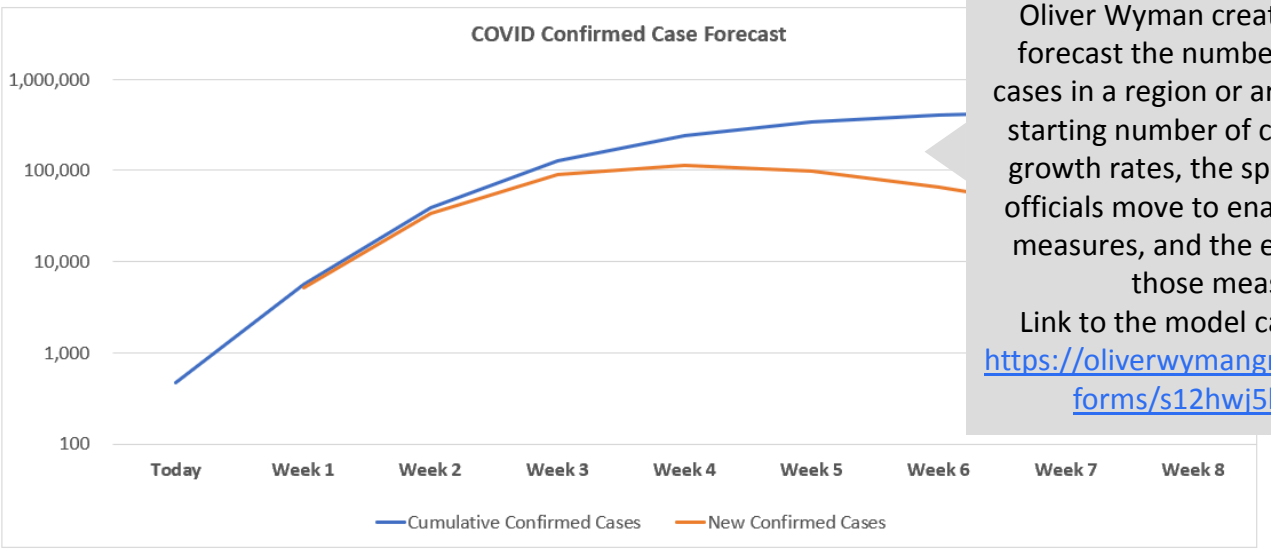
Oliver Wyman COVID-19 Scenario Generator

Version#: 1.0. Version Date: March 15, 2020

Modeling Assumptions		
Current Number of Confimed Cases	476	*Current number of Confirmed Cases for forecast region*
Delay Until Containment Effort Starts (days)	7	*Estimated days until increased containment measures are implemented*
Expected Effectiveness of Containment Effort	Medium	*Expected levels of containment measures (testing, social distancing, quarantines)*
Current Daily Growth Rate in Cases	50%	*s is ideally calculated as: (Confirmed Cases(day)/Confirmed Cases(prior day)) - 1. If data are not available, see*

Scenario Output

Case Type	Today	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Cumulative Confirmed Cases	476	5,698	39,479	128,744	243,284	340,545	406,033	444,917	466,518
New Confirmed Cases		5,222	33,782	89,264	114,540	97,261	65,488	38,884	21,601



Oliver Wyman created a model to forecast the number of confirmed cases in a region or area based on the starting number of cases, daily case growth rates, the speed with which officials move to enact containment measures, and the effectiveness of those measures.

Link to the model can be found at https://oliverwymangroup.wufoo.com/forms/s12hwj5h0qqcxx1/

HOW LONG COULD THIS LAST? HOW MIGHT THIS PLAY OUT?

Scenario 1: Serial outbreaks lasting 3–4 months

What you'd have to believe

- New case rates spike with initial outbreak in a region and increased testing, but level off within ~8 weeks
- Public health officials enact early and aggressive containment measures to contain localized outbreaks (e.g., Norway, India, Czech Republic), learning from the "playbook" set by China, Singapore and refined by the next regions to experience outbreak
- Population largely complies with public health directives, slowing human-to-human transmission; health systems are not overwhelmed, CFR does not rise
- New case rates in China do not increase after quarantines and travel restrictions are relaxed and schools reopen

What we know so far

- Aggressive containment measures in China (100 MM under quarantine in February 2020, 59 MM remain so as of early March) contained spread within 8 weeks of identification
- New case rates in China have declined; similar compliance would be necessary in rest of world to contain
- China has not yet returned to "normal" (e.g., schools are still closed with staggered re-opening planned for Mar-May)

Anticipated business impacts

- Supply chain shocks reverberate into Q2 in some sectors; Chinese manufacturing shutdown in part tempered by inventories stockpiled in advance of Lunar New Year
- Corporate and government-mandated (e.g., US restriction on European travel announced 3/11) travel restrictions in affected regions lead to drop-off in demand in airlines, hotels and impact retail supply and demand
- Earnings dented post outbreak in a particular region, but swift recovery and rebounding consumer confidence allows companies to return to normal one to two quarters later
- Complete global recovery takes until Q4 or longer, given serial pattern of outbreaks and containment; recovery more rapid if virus proves to be seasonal

Oliver Wyman COVID-19 Scenario Generator insights

- Containment measures can take a few days to take hold, but once they do, we see a steady decay in the growth of cases and a flattening of the curve
- High levels of containment in a country with 100 starting cases and a growth rate of 50% per day, can contain the problem to 10,000 cases over an 8 week period (a ~100X difference compared to delayed, and minimal containment measures)

HOW LONG COULD THIS LAST? HOW MIGHT THIS PLAY OUT?

Scenario 2: 6–12 months to rein in pandemic

What you'd have to believe

- While some countries move rapidly to replicate aggressive containment measures, others either do not or are unable to drive compliance
- Countries with slower, less aggressive response and/or poor compliance are not able to contain the virus with case rates continuing to increase beyond expected 6–8 week window
- Some countries with initial containment see spike of cases after lifting containment measures
- Insufficient public health measures are offset by an external factor (e.g., viral mutation affecting virulence, early identification and improved treatment, seasonality) that either decreases CFR or helps contain spread

What we know so far

- Other countries may be unable (e.g., lack of resources to rapidly erect hospitals, lack of infrastructure and surveillance capabilities to track and isolate cases) or unwilling to mount the same public health response as China
- Compliance with public health recommendations is more difficult to enforce in many countries (e.g., broken quarantine of patient in New Hampshire, USA)
- Virulence-lowering viral mutations have been observed previously (e.g., SARS) and there is emerging evidence of at least two strains of COVID-19, one less virulent than the other
- While ~50% of coronavirus family have proved to be seasonal, no direct evidence yet indicates COVID-19 is seasonal
- Aggressive testing and documentation of effective treatment protocols has contributed to a dramatically reduced CFR in South Korea (0.97% as of 3/17) compared to that of other regions

Anticipated business impacts

- Employers reluctant to relax travel and WFH mandates without guidance from public health officials
- Vulnerable industries experience a continued drop in demand as consumer confidence wavers into Q2 and Q3 and take measures to stabilize balance sheets and ensure liquidity
- Supply chain shocks play out over a six month period, after which momentum could begin to stabilize and recover
- Moderate to serious recession in impacted countries; larger, more diversified economies with less dependence on international trade and/or foreign income than other economies prove better able to weather slowing growth
- Significant central bank intervention and government support programs (e.g. extended unemployment insurance, credit support for SMEs) are implemented

HOW LONG COULD THIS LAST? HOW MIGHT THIS PLAY OUT?

Scenario 3: 12+ months; ongoing pandemic

What you'd have to believe

- Virus proves to either not be seasonal, or seasonal and endemic (rising, falling and returning seasonally by Hemisphere)
- Regions are unable to contain outbreaks; virus spreads widely, affecting ~20–60%[1] of adult population in next 2 years
- Mortality rates do not decline, placing significant strain on or overwhelming health systems and further increasing fatalities
- Vaccine is required to halt progress of disease

What we know so far

- Insufficient data to support scenario as of yet
- Multiple vaccines under development but at least 1 year out
- Unless "spike" of cases in a region can be smoothed over a longer period of time, health systems become overtaxed and cannot adequately meet all patients' needs (e.g., Wuhan, Italy)
- As health systems become overwhelmed, transmission and case fatality increases

Anticipated business impacts

- Severe recession on the order of Global Financial Crisis in 2020, possibly into 2021
- Dramatic drop in demand (consumer confidence, access to supply, part-time/gig economy workers with less discretionary income) results in severe contraction in Q2 and Q3 with uncertain recovery in Q4
- Companies in particularly vulnerable industries (travel, energy, hospitality) require additional liquidity, and may trigger complications for related industries
- Massive central bank intervention plus government stimulus injected to protect vulnerable workers and businesses on a scale exceeding TARP

Oliver Wyman COVID-19 Scenario Generator insights

- If daily growth rate is 50%, a totally passive approach to managing the outbreak leads to a growth trajectory just shy of a truly exponential curve
- 100 cases become almost 1,000,000 over an 8-week period

Source: 1.Harvard School of Public Health


02
IMPLICATIONS AND CONSIDERATIONS

WHAT SHOULD COMPANIES BE THINKING ABOUT RIGHT NOW?

Confirm Business Resiliency	All companies should be implementing business continuity plans to reassure employees and ensure readiness for **supply chain constraints, demand shocks, and impacts to business partners**, prioritizing critical business activities and creating contingency plans for disruption
Model Financial scenarios	Companies should be **evaluating their financial outlook, modelling supply and demand** across a number of scenarios, identifying potential interventions and contingency plans for subsequent impacts and/or sustained challenges (e.*g. strategies for managing variable costs, cash flow, liquidity)*
Reassure Customers	Consumer concerns need to be understood, mapped, and incorporated into the business continuity plan such that consumer needs are addressed and trust is maintained
Move to Digitization Rapidly	Some industries are likely to see a **massive acceleration in the use of digital channels.** Retail, Financial Services, and Healthcare companies have experienced 100–900% growth in key digital channels in China during the outbreak. Customers with positive digital experiences are unlikely to return to analog channels
Prepare for Long Haul	Pandemic business continuity plans will get companies through the next 2–4 weeks, but strategies may be required to get through 6–12 months (or more) of disruption if subsequent demand shocks exist. Companies should consider the nature and required timing associated with more structural changes to their operations
Convene Industry	Companies should consider which industry and government collaborations are necessary to address safety concerns, share best practices, stimulate demand, and rebuild consumer trust

KEY ELEMENTS OF PANDEMIC BUSINESS CONTINUITY PLANS

Every company should have a business resiliency team fully activated and focused on these key elements:

Protect your people first

- Ensure that your staff understand what to do (personal actions) to protect themselves, and to stop the spread
- Ensure your staff know to stay away from work if unwell and seek medical help; promote use of telehealth
- Stay up to date on the latest travel advice as it could change quickly
- Be conscious that your staff may have caregiving responsibilities for ill family
- Listen to and respond to staff concerns – anxiety can be more disruptive than the virus itself
- Institute work from home policies if warranted

Look after your business interests

- Know which business processes and activities are critical and require protection
- Pay special attention to customers; determine how best to protect and assure them
- Plan for how to continue operations if you experience significant staff absences
- Prepare for reductions (especially consumer confidence) or increases in demand (i.e., cleaning services, e-commerce)
- Review your relevant insurance policies, coverage, and claims processes

Secure your supply chain

- Clients need to develop an end-to-end supply chain x-ray
- Identify your critical suppliers and their locations, especially if in heavily impacted areas or with less support resources available
- Confirm the status and location of expected deliveries/shipments
- Understand what your suppliers' plans are and work together to protect both of your interests, particularly if a smaller business

Source: Marsh Risk Consulting

SPECIFIC CONSIDERATIONS FOR RETAIL AND CONSUMER GOODS INDUSTRY

Business continuity

Mitigating supply / demand shocks

Adapting to structural changes

Short term

Medium term

Long term

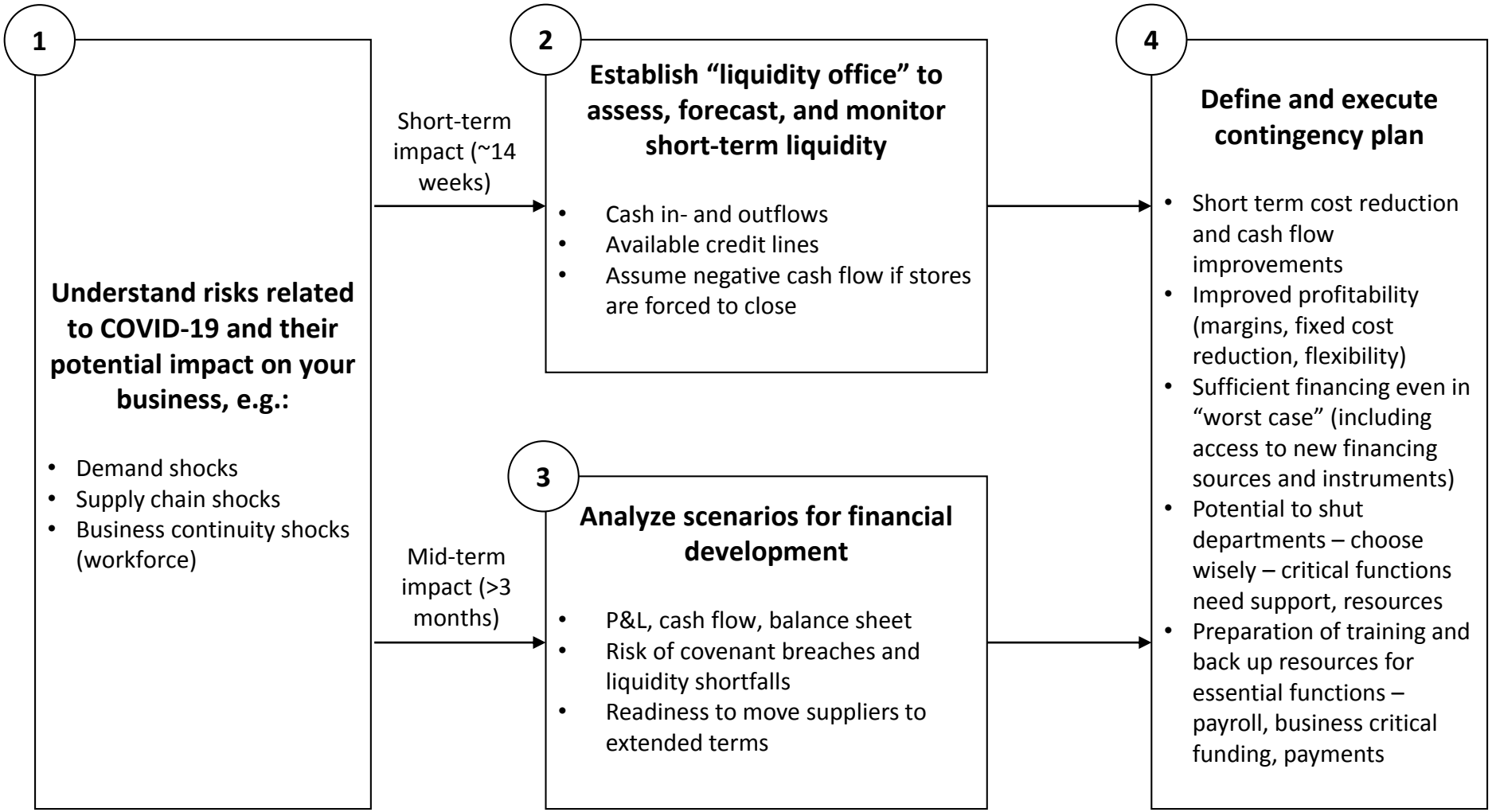
BUSINESS CONTINUITY CONSIDERATIONS (1 OF 2)

First, it is important to avoid worsening the situation by protecting shoppers and employees

- Actively step up in-store hygiene (e.g., provide hand sanitizer, sanitize surfaces, switch to no reusable bag policy, pre-package baked goods/produce, close salad bars, end sampling)
- Keep sick staff from coming to work (i.e., provide clear messaging that staying home sick will not be held against staff, consider extending paid sick leave)
- Prepare to deal with absenteeism (e.g. shifting labor if insufficient staff/demand) and evaluate store utilization (e.g. fully open to restricted numbers to curb side and delivery to picking for delivery to close)
- Evaluate loss prevention measures e.g. store security, shoplifting prevention
- Anticipate and plan for “next step” measures
- Engage and coordinate with local communities / health organizations

BUSINESS CONTINUITY CONSIDERATIONS (2 OF 2)

It is also crucial to prepare financially in the short-term with a crisis budget to ensure sufficient liquidity / cash-on-hand



MITIGATING SUPPLY / DEMAND SHOCKS (1 OF 2)

It is crucial to take immediate actions to mitigate demand shocks

Examples

techcrunch.com › 2020/03/16 › grocery-delivery-apps-see-record-do...

Grocery delivery apps see record downloads amid ...

3 days ago - Apptopia's report didn't analyze the impact of the **coronavirus** outbreak on Amazon's **grocery delivery** business, which includes Amazon Fresh ...

www.insider.com › food-delivery-safe-during-coronavirus-experts-ad...

Food delivery is the safest way to get food during coronavirus ...

For those opting to order in, **grocery** and meal **delivery** services are clarifying their hygiene policies and offering options for door drop-off service so customers can ...

Potential actions to take

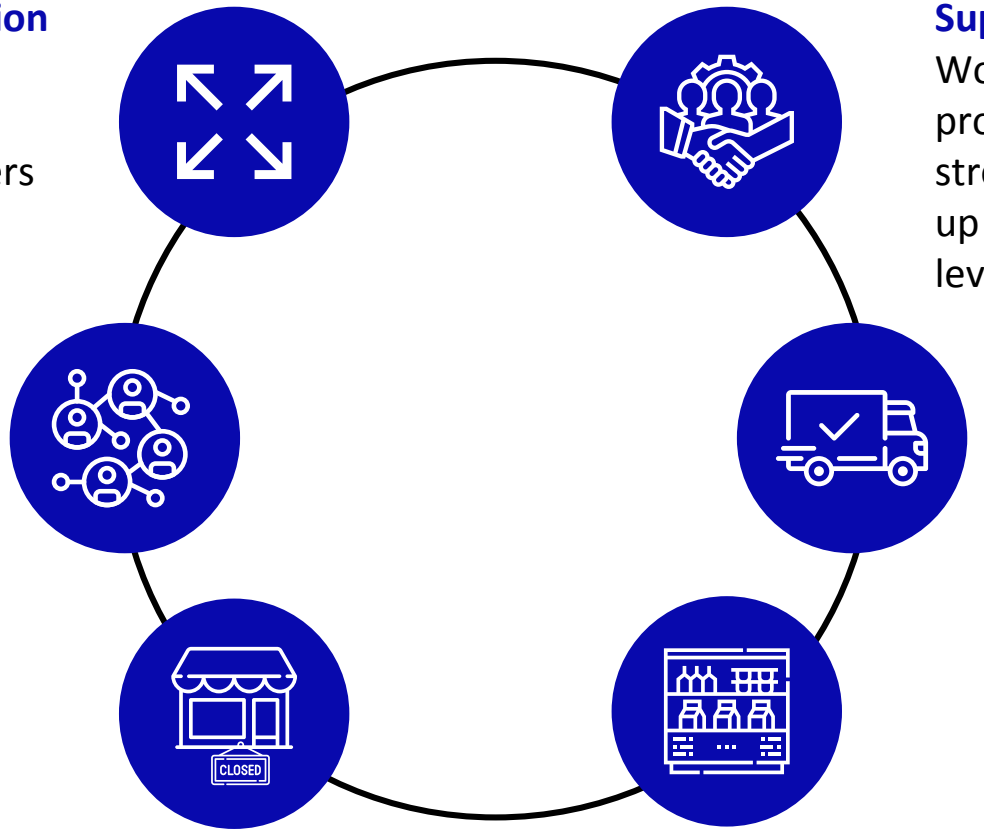
- Set unit purchase limits for high demand products to ensure availability
- Actively encourage consumers to shift to your ecommerce channels (e.g., waive delivery fees, no-contact deliveries, signage, in-store or by phone sign up for populations not used to online)
- Revise promotional plans to meet shoppers' needs, avoid exacerbating supply issues and manage margins
- Be nimble in adjusting forecasts and track impact in first-hit cities
- Anticipate negative impact to come of "pull forward" of current high-demand items (e.g., toilet paper)
- Consider quarantine areas for returns

MITIGATING SUPPLY / DEMAND SHOCKS (2 OF 2)

Supply shocks also need to carefully managed through Procurement and supply chain functions

Capacity expansion
Quickly expand capacity to fulfill ecommerce orders

Supplier management
Work with suppliers on product allocations, streamlining SKUs to ramp-up production, and service level standards



Supplier diversification
Diversify base of suppliers geographically

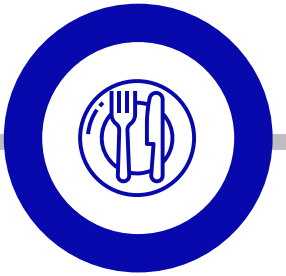
Transportation
Prepare for transportation disruptions

Store closures
Frequently evaluate store utilization i.e. fully open to restricted numbers to curb side and delivery to picking for delivery to close

Assortment planning
Prepare back-up planograms for at-risk inventory (eg imported products)

ADAPTING TO STRUCTURAL CHANGES (1 OF 2)

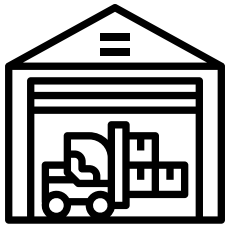
Pandemic-driven shifts in consumer behavior may persist in the long-term, yielding specific implications and opportunities



	Decline in dine-in restaurants	Adoption of online
Trend	As consumers shun dining-in, at-home dining beats food delivery as the more economical alternative	Increased adoption of online shopping during pandemic may create new buying habits
Implication	*Grocery stores can expect an increase in demand as customers shift away from dine-in, with particular opportunities to grow in prepared and frozen categories*	*Retailers should review buy online, pick up in-store (BOPIS), Ship from Store (SFS), and Ship from Warehouse (SFW) as fulfilment options*

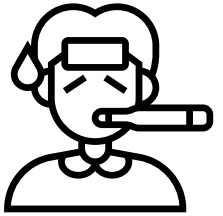
ADAPTING TO STRUCTURAL CHANGES (2 OF 2)

Ultimately, COVID-19 may require lasting changes to the business model



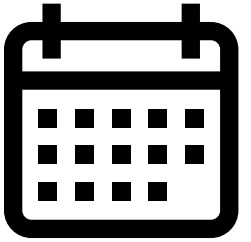
Resilient supply chains

More resilient supply chains will involve higher COGS while holding inventory will reduce working capital



Sticky sick leave

Return to pre-pandemic status quo unlikely as revised sick leaves policies are likely to "stick"



Efficient labor models

Improved staffing models required to weather COVID-19 will result in permanently more efficient store labor models

Increased M&A activity

Spike in M&A activity likely as less well-positioned players struggle and look for exits

COVID-19 RESOURCES

WHO COVID-19 Situation Reports

https://www.who.int/emergencies/diseases/novel-coronavirus-2019

CDC Resources

https://www.cdc.gov/coronavirus/2019ncov/index.html

Oliver Wyman Perspectives

https://www.oliverwyman.com/coronavirus

Retail and Consumer Goods Resources:

https://www.oliverwyman.com/coronavirus.html#retailandconsumergoods

APPENDIX

SUMMARY OF WHERE WE ARE IN CHINA

Short term impact on mainland China

China is returning to work

- Unprecedented government action has brought new cases down rapidly; numbers remain small outside of Hubei
- Over 60% of production has resumed and 30% of migrants have returned to tier-1 cities

Q1 GDP growth will be dampened, but it has always been a slow quarter; Q2 and beyond will depend on government action

- Short term hit on the Chinese economy is inevitable with Q1 GDP ~4%; Government has introduced a series of stimulus policies to support growth
- We expect China GDP growth between 5.5%–6.0% in 2020, based on further expected expected stimulus Our downside estimate is 4.6%–5.5%

China will be heavily impacted by global slowdown

- Risk of pandemic-induced global slowdown, further escalation in trade war, and challenging US political narrative still present headwinds

Layered impact on Hong Kong

COVID-19 has "layered" additional stress on an already challenged Hong Kong economy

- Geopolitical tension since mid-2019 has a strong negative impact on HK's economy, already leading it into a recession
- Although the number of confirmed cases in HK is still small, near-closure of the border with mainland has materially impacted retail sector; HK SMEs and retailers are now facing a far greater liquidity pressure than ever

Path forward more uncertain for HK

- Creative & targeted government support will be essential for HK's speedy recovery, however there is limited scope given currency peg for monetary policy
- Transmission from real economy to financial sector only now starting to happen, with uncertain future

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